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March 22, 2011

Mr. Steven J. Faryan
On-Scene Coordinator
United States Environmental Protection Agency
Emergency Response Branch
77 West Jackson Boulevard, Fifth Floor
Chicago, Illinois 60604

**Subject: Cadie Auto Salvage Cylinder Removal Action
Belvidere, Boone County, Illinois
Technical Direction Document No. S05-0001-1011-007
Document Control No. 1277-2A-ALYT
Identification No. B5YP
WESTON Work Order No. 20405.012.001.1277.00**

Dear Mr. Faryan:

The United States Environmental Protection Agency (U.S. EPA) tasked the Weston Solutions, Inc., (WESTON®) Superfund Technical Assessment and Response Team (START) to provide oversight of removal activities at the Cadie Auto Salvage Cylinder Site (Site) in Belvidere, Boone County, Illinois. Under Technical Direction Document (TDD) number S05-0001-1011-007, U.S. EPA tasked WESTON START to:

- perform general project oversight;
- track START oversight activities' costs;
- oversee removal of all gas cylinders on site;
- oversee removal of drums, miscellaneous containers, and contaminated soil;
- collect written and photographic documentation; and
- track the disposition of waste.

Removal activities commenced on November 08, 2010, and concluded December 01, 2010. Table 1 of Attachment A shows the organization of the response and lists the parties involved.

SITE DESCRIPTION

The Site is a former auto hauling and salvage facility located at 1451 McKinley Avenue in Belvidere, Boone County, Illinois and is situated in a rural and residential/commercial setting (Figure 1 in Attachment B). The geographic coordinates for the Site are 46° 16' 32.65" North latitude and 88° 50' 21.38" West longitude. The Site contained a pole barn, three semi-trailers, and a box truck which contained various sized gas cylinders (Figure 2 in Attachment B). The Site is bordered to the north by US-20 with open farm land beyond, to the south by commercial

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1277-2A-ALYT

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properties with residential properties beyond, to the east by residential properties with Lincoln Elementary School beyond, and to the west by commercial properties with open farm land beyond.

BACKGROUND

In August 2010, the Illinois Environmental Protection Agency (IEPA) conducted a preliminary inspection of the Site and observed a box truck containing various sized gas cylinders that were labeled "chlorine" and "poisonous gas." Several of the gas cylinders contain materials that are known to be pyrophoric and poisonous and include silane, triethyl borane, and chlorine. Additionally, approximately 60 drums of various sizes suspected of containing gasoline and waste oil were observed on Site.

On August 12 and 13, 2010, U.S. EPA On-Scene Coordinator (OSC) Steve Faryan and WESTON START conducted a site assessment to evaluate the potential for imminent and substantial threats to human health, welfare, and the environment. WESTON START documented Site conditions; conducted an inventory of containers (approximately 70 drums and 11 other small containers); and collected residential well, soil, waste solid, and waste liquid samples. The analytical results indicated the wastes contained flammable materials and high concentrations of petroleum wastes and petroleum-related volatile organic compounds (VOCs).

On September 21, 2010, IEPA conducted x-ray fluorescence (XRF) screening of soil and collected four soil samples. The soil samples were submitted for the following laboratory analyses: VOCs, semivolatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), total petroleum hydrocarbon (TPH)-gasoline range organics (GRO), TPH-diesel range organics (DRO), Resource Conservation and Recovery Act (RCRA) 8 metals, and pH. The analytical results revealed the presence of petroleum waste, metals, VOCs, and SVOCs in the on-site soil.

From October 26 to November 2, 2010, U.S. EPA, START, and subcontractor Focus Environmental mobilized to the Site to conduct a evaluation of the cylinders identified during the site assessment and to stage the cylinders in a secure conex box. START conducted an inventory of the cylinders, investigated the integrity of the cylinders, and filled out cylinder evaluation forms. The inventory included documenting the condition, approximate size, volume, and suspected contents of each container. There were 240 cylinders which contained over 90 different known and suspected materials. Some cylinders contained ammonia, chlorine, phosgene, pyrophoric materials, and hydrogen sulfide. Each cylinder was screened using radiation detectors. No radiation readings exceeded background levels for any of the cylinders. After the cylinder evaluation, the cylinders were staged in a Conex box that was locked. In addition, some mercury and various other chemicals (including caustic soda, aerosol cans, and ethylene glycol) in lab pack containers were discovered inside the box truck.



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REMOVAL ACTIONS

In November 2010, U.S. EPA signed an Action Memorandum to conduct a time-critical removal action at the Site. U.S. EPA conducted removal action activities to remove the potential threat posed to human health and the environment from gas cylinders and waste materials present on Site. The removal activities included the following:

Removal Activities from November 8, 2010 through December 1, 2010

During the first week of removal activities, U.S. EPA, START, and ERRS contractor Environmental Quality Management, Inc., mobilized to the Site. Initially, ERRS contractors mobilized a trailer to the Site and secured the Site and the associated conex box with existing fencing and additional installed fencing. Signs were posted on the southwest entrance gate and on the site trailer to alert trespassers to access restrictions. Both the site trailer and building were locked before personnel cleared the Site for the day throughout the entire removal action. Site security personnel were subcontracted by ERRS and patrolled the Site when site activities ended for the day and on weekends.

The removal of the gas cylinders was bid out to several specialty gas cylinder disposal companies. ERRS personnel submitted the completed cylinder inventory to the subcontractors and reviewed the returned bids. SET Environmental, Inc. (SET) was awarded the removal contract and mobilized two large tractor-trailers to the Site. All cylinders were matched to their corresponding cylinder evaluation form before being loaded into crates for shipment off site for disposal. Several gas cylinders were deemed to be non-DOT shippable, according to current regulations, and had to be over-packed in pressurized nitrogen containers before shipping off site. A total of 241 gas cylinders and 7 empty cylinders were removed from the Site on 11/30/10 and shipped to SET's Houston, Texas facility for disposal.

Approximately 70 drums, 11 miscellaneous containers, and various small lab pack chemicals were discovered throughout the Site and the associated buildings during the site assessment activities. During the removal action, ERRS personnel staged all site drums and containers in one location and collected a sample from each for profiling. An ERRS chemist utilized the HAZCAT[®] Chemical Waste Identification System to analyze the samples for waste stream profiling. The drums and miscellaneous containers were then bulked according to waste stream and shipped off site for proper disposal. All empty drums were crushed on site and loaded into a roll-off box for disposal.

- Approximately, 2 ounces (oz.) of metallic mercury was containerized and shipped to the Mercury Waste Solutions facility in Union Grove, WI for recycling.
- Approximately, 10 tons of RCRA empty drums were shipped in a roll off box to the Republic Services Lee County landfill in Dixon, IL, for recycling?.



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- Approximately 733 gallons of flammable waste liquid was transported via vacuum truck to the Petro-Chem Processing Group facility in Detroit, IL, for disposal.
- Approximately 75 pint jars of various lab pack chemicals, 5 pint jars of potassium permanganate, and approximately 50 aerosol cans were containerized and shipped to the SET Environmental, Inc., disposal facility in Houston, TX, for disposal.

Three areas of stained soil were identified in the eastern portion of the Site. ERRS personnel utilized a small bucket excavator to remove stained soil and stage it in roll-off boxes for profiling and disposal. Profile samples were collected by ERRS personnel in a non-biased way and submitted to an ERRS-procured laboratory for disposal analysis.

- Approximately 8 tons of soil was designated non-hazardous waste and another 18 tons of soil were designated petroleum-contaminated soil. All soil was shipped to the Republic Services landfill in Dixon, IL.

General non-hazardous debris from the site was collected and loaded in to a roll-off bin for disposal at the Republic Services landfill in Dixon, IL.

During the final week of the removal, November 29 through December 1, 2010, demobilization activities occurred including the demobilization of the site office trailer and heavy equipment.

Air Monitoring

On a frequent basis each day of the removal, START personnel performed air monitoring in work zones using a MultiRae Plus five-gas monitor to measure for organic vapors, oxygen levels, methane, carbon monoxide, and lower explosion levels. No readings above background were observed on the MultiRae throughout the removal.

START personnel also conducted air monitoring in the conex box and in each crate of gas cylinders prior to work being conducted daily. Air monitoring included the utilization of the MultiRae Plus five-gas monitor and ToxiRae single gas monitors for hydrogen cyanide, chlorine, and ammonia. No readings above background were observed throughout the removal.

DISPOSITION OF WASTES

Eleven disposal groups were identified for disposal or recycling. Table 2 summarizes the shipping dates, volumes shipped, and disposal facilities. The disposal of site waste streams is summarized below.

- **Compressed Gas Cylinders – Pyrophoric.** 33 compressed gas cylinders containing pyrophoric constituents were shipped to SET Environmental, Inc., Houston, Texas, for disposal.



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- **Compressed Gas Cylinders – Flammable, Oxidizers, Toxics, Non-Regulated, etc...** 216 compressed gas cylinders containing flammable, oxidizing, toxic, non-regulated constituents, or empty were shipped to SET Environmental, Inc., Houston, Texas, for disposal.
- **Metallic Mercury.** Approximately 2 oz. of metallic mercury were containerized and shipped to Mercury Waste Solutions, Union Grove, Wisconsin, for recycling.
- **Waste Flammable Liquid.** 733 gallons of waste flammable liquids were shipped to Petro-Chem Processing Group, Detroit, Michigan, for disposal.
- **RCRA Empty Drums.** 10 tons of crushed RCRA empty drums were shipped to Republic Services, Inc., Dixon, Illinois, for disposal.
- **Waste Acrolein and Bromine Pentafluoride Cylinders.** 3 compressed gas cylinders were shipped to SET Environmental, Inc., Houston, Texas, for disposal.
- **Waste Lab Pack Chemicals.** 75 x 1 pint jars were containerized and shipped to SET Environmental, Inc., Houston, Texas, for disposal.
- **Waste Potassium Permanganate and Waste Aerosols.** 5 x 1 pint jars of potassium permanganate and 50 aerosol cans were containerized and shipped to SET Environmental, Inc., Houston, Texas, for disposal.
- **Contaminated Soil.** 8 tons of non-hazardous soil and 18 tons of hazardous soil were shipped to Republic Services, Inc., Dixon, Illinois, for disposal.

EFFECTIVENESS OF REMOVAL ACTIVITIES

Actions Taken by State and Local Forces

The Boone County Fire Department assisted U.S. EPA by providing site background information, was present during site reconnaissance activities, and provided support for securing the Site. The Illinois Environmental Protection Agency (IEPA) provided assistance to the U.S. EPA during the site assessment and provided background information. Illinois Emergency Management Agency (IEMA) provided background information on the Site. IEPA, IEMA, and the Boone County Fire Department were kept informed of the removal activities with pollution reports and verbal updates from U.S. EPA.

Actions Taken by Federal Agencies and Special Teams

The U.S. EPA was responsible for the removal activities that occurred at the Site and was supported by WESTON START and the ERRS contractor.

START provided technical support for U.S. EPA while at the Site. The technical support included:

- general and health and safety oversight
- written and photographic documentation of all site activities



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- waste disposition tracking
- oversight of the development and review of final deliverable documents
- WESTON START-related cost tracking

The U.S. EPA ERRS contractor performed the removal activities at the Site. The removal activities provided by EQM included:

- site support items (office trailer, phone, electricity, and site security)
- debris/trash removal
- waste consolidation and profiling
- subcontracted laboratory services for composite waste samples
- transportation and disposal coordination of wastes
- ERRS-related cost tracking

DIFFICULTIES ENCOUNTERED

No difficulties were encountered during the removal activities.

CONCLUSIONS

Site removal activities occurred from November 08, 2010, through December 01, 2010. A total of 248 compressed gas cylinders on the Site were safely and promptly shipped off site for proper disposal. Approximately 733 gallons of flammable liquids (including diesel fuel and waste oil), 2 oz. of metallic mercury, ten tons of RCRA empty drums, eight tons of non-hazardous soil, 18 tons of hazardous soil, three compressed gas cylinders of waste acrolein and waste bromide pentafluoride, four drums of waste lab pack chemicals, five pints of waste potassium permanganate, and fifty cans of waste aerosols were removed and disposed of off site. Based on the removal activities performed, the Site no longer poses an imminent or substantial threat to human health, welfare, and the environment.

This letter report serves as the final TDD deliverable for the Cadie Auto Salvage Cylinder Removal Action. All tasks pertaining to this TDD have been completed. If there are any questions or comments regarding this report, please contact me at (312) 424-3339.

Very truly yours,
Weston Solutions, Inc.

A handwritten signature in black ink, appearing to read "Lisa Graczyk". The signature is fluid and cursive, written over a white background.

Lisa Graczyk



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U.S. EPA

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WESTON START Project Manager
312-424-3300

Attachments:

- A – Tables
- B – Figures
- C – Photographic Documentation

cc: WESTON START TDD File

ATTACHMENT A

TABLES

Table 1
Organization of the Response
Cadie Auto Salvage Cylinder
Belvidere, Boone County, Illinois

Agencies or Parties Involved	Contact	Description of Participation
U.S. EPA – Region V Superfund Division Emergency Response Branch 77 West Jackson Blvd. Chicago, Illinois 60604 312-353-9351	Steve Faryan	Federal OSC responsible for overall oversight and success of the project.
Weston Solutions, Inc. 20 North Wacker Drive Suite 1210 Chicago, Illinois 60606 312-424-3339	Lisa Graczyk Jonathan Colomb	WESTON START project manager and site lead responsible for removal oversight, documentation, air monitoring, and START-related cost-tracking.
Environmental Quality Management, Inc. 3500 179 th Street Unit #6 Hammond, Indiana 46323 219-845-6596	Jeff Rhinefield	Response Manager responsible for direction of daily ERRS activity. Provided personnel and equipment necessary for removal and coordinated transportation and disposal of waste streams. Also tracked ERRS-related costs.
Illinois Environmental Protection Agency 4302 North Main Street Rockford, Illinois 61265 815-987-7760	Donna Shehane	IEPA project manager who participated in initial assessment of Site prior to initiation of U.S. EPA removal action.

ERRS – Emergency and Rapid Response Services

IEPA – Illinois Environmental Protection Agency

OSC – On-Scene Coordinator

START – Superfund Technical Assessment and Response Team

U.S. EPA – United States Environmental Protection Agency

WESTON – Weston Solutions, Inc

Table 2
Waste Disposition Summary
Cadie Auto Salvage Cylinder Removal
Belvidere, Boone County, Illinois

Waste Stream	Quantity	Date Transported Off-Site	Disposal Facility	Manifest No.
Compressed Gas Cylinders – Pyrophoric	33 cylinders	November 30, 2010	SET Environmental, Inc. Houston, Texas 77087	005903632 JJK
Compressed Gas Cylinders – Flammable, Oxidizer, Toxic, Non-Regulated, etc.	215 cylinders	November 30, 2010	SET Environmental, Inc. Houston, Texas 77087	005903633 JJK
Waste Acrolein, Waste Bromine Pentafluoride	3 cylinders	November 30, 2010	SET Environmental, Inc. Houston, Texas 77087	005903634 JJK
Metallic Mercury	2 ounces	November 30, 2010	WM-Mercury Waste, Inc. Union Grove, Wisconsin 53182	00207679260
Waste flammable liquids	733 gallons	November 29, 2010	Petro-Chem Processing Group Detroit, Michigan 48214	007853115 JJK
RCRA Empty Containers	10 tons	December 1, 2010	Lee County Landfill Dixon, Illinois 61021	NA
Petroleum Contaminated Soil	18 tons	December 1, 2010	Lee County Landfill Dixon, Illinois 61021	NA
Non Hazardous Solids	8 tons	December 1, 2010	Lee County Landfill Dixon, Illinois 61021	NA
Waste Lab Pack Chemicals	75 pints	November 30, 2010	SET Environmental, Inc. Houston, Texas 77087	007833686 JJK
Waste Potassium Permanganate	5 pints	November 30, 2010	SET Environmental, Inc. Houston, Texas 77087	007833687 JJK
Waste Aerosols	50 cans	November 30, 2010	SET Environmental, Inc. Houston, Texas 77087	007833687 JJK

RCRA – Resource Conservation and Recovery Act

NA – Not Applicable

ATTACHMENT B

FIGURES

Image Source: ESRI US Topo Maps

SITE LOCATION



Legend

0 2,000
Feet



Prepared for:
U.S. EPA REGION V

Contract No.: EP-S5-06-04
TDD: S05-0001-1008-001
DCN: 1163-2A-AIMA



Prepared By:
**WESTON
SOLUTIONS, INC**

750 E. Bunker Court
Suite 500
Vernon Hills, Illinois 60061


Figure 1-1

Site Location Map
Cadie Auto Salvage Cylinder Site
Belvidere, Boone County, Illinois

Image Source: Digital Globe June 2009



Legend

 Approximate Property Boundary

0 150 Feet



Prepared for:
U.S. EPA REGION V

Contract No.: EP-S5-06-04
TDD: S05-0001-1008-001
DCN: 1163-2A-AIMA



Prepared By:
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Vernon Hills, Illinois 60061

Figure 2-1

Site Features Map
Cadie Auto Salvage Cylinder Site
Belvidere, Boone County, Illinois

ATTACHMENT C

PHOTOGRAPHIC DOCUMENTATION



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 1

Date: November 8, 2010

Direction: East

Photographer: Jonathan Colomb

Subject: Security fence being constructed around perimeter of Conex box containing cylinders of hazardous materials



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 2

Date: November 10, 2010

Direction: East

Photographer: Jonathan Colomb

Subject: Completed security fence around perimeter of Conex box



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 3

Direction: East

Subject: Cylinders and cylinders in crates stored inside Conex box

Date: November 8, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 4

Direction: North

Subject: Crates of cylinders labeled according to contents for shipping (date on photograph is incorrect)

Date: November 30, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 5

Direction: Northeast

Subject: Cylinders labeled and loaded on trucks for shipping (date on photograph is incorrect)

Date: December 1, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 6

Direction: East

Subject: Salvage cylinder for non-DOT shippable cylinders (date on photograph is incorrect)

Date: November 30, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 7

Direction: North

Subject: Cylinders labeled and loaded on trucks for shipping (date on photograph is incorrect)

Date: December 1, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 8

Direction: East

Subject: Empty Conex box after all cylinders shipped off Site (date on photograph is incorrect)

Date: December 1, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site
Photograph No.: 9
Direction: Northwest
Subject: Drums on northeast portion of the Site.

Date: November 9, 2010
Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site
Photograph No.: 10
Direction: West
Subject: Drums being moved and staged near pole barn for sampling.

Date: November 9, 2010
Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 11

Direction: North

Subject: Drums staged in preparation for sampling

Date: November 9, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 12

Direction: Northeast

Subject: ERRS personnel sampling drums for waste profiling

Date: November 10, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 13

Direction: North

Subject: Miscellaneous containers staged for sampling

Date: November 10, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 14

Direction: North

Subject: ERRS personnel conducting HAZCAT activities on waste profile samples

Date: November 10, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 15

Direction: South

Subject: Laboratory-pack chemicals containerized for shipping and disposal (date on photograph is incorrect)

Date: November 15, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 16

Direction: South

Subject: ERRS personnel investigating suspected container of mercury (date on photograph is incorrect)

Date: November 16, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 17

Direction: North

Subject: Waste mercury containerized and loaded onto truck for shipping and disposal (date on photograph is incorrect)

Date: November 9, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 18

Direction: Southwest

Subject: ERRS personnel crushing empty drums for disposal

Date: November 10, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 19

Direction: South

Subject: Crushed drums being loaded in roll-off boxes for disposal (date on photograph is incorrect)

Date: November 30, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 20

Direction: East

Subject: Additional empty cylinders discovered on site

Date: November 11, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 21

Direction: Northeast

Subject: Stained soil being excavated from northeast portion of the Site

Date: November 11, 2010

Photographer: Jonathan Colomb



Site: Cadie Auto Salvage Cylinder Site

Photograph No.: 22

Direction: Northeast

Subject: SET trucks placarded appropriately for transportation of cylinders and laboratory-pack chemicals

Date: December 1, 2010

Photographer: Jonathan Colomb